with special reference to the otter-trawl. Mr. R. A. Todd writes on the invertebrate fauna and fish-food of the bays between the Start and Exmouth, Mr. Robert Gurney on the larvæ of certain British Crangonidæ, and Mr. Frank Balfour Browne on the eggs and larvæ of Teleostean fishes. The number, which is of larger size than usual, contains three plates and a chart.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Smith's prizes in natural philosophy for Bachelors of Arts are awarded to Mr. E. Cunningham, St. John's; Mr. J. C. M. Garnett, Trinity; Mr. H. A. Webb, Trinity; and Mr. P. W. Wood, Emmanuel. The names are in alphabetical order, and are respectively those of the senior wrangler, sixteenth wrangler, and the two (bracketed) third wranglers in 1902.

The Worshipful Company of Girdlers has made a grant of 100*l.* a year to the university for the endowment of a university lecturer in economics. The appointment is in the first instance for three years.

The general board proposes the appointment of an assistant curator of the Botanical Museum at a stipend of 100*l.* a year.

A special syndicate proposes the establishment in the university of a board of anthropological studies, for the purpose of systematising and directing work in anthropology by advanced students.

Prof. Adami and Prof. Bovey, F.R.S., of McGill University, Montreal, have been appointed representatives of the university at the jubilee of the University of Wisconsin, to be celebrated at Madison in June.

The Senate has adopted an address of sympathy with the University of Turin on the destruction by fire of the Biblioteca Nazionale.

DR. G. E. RICHMOND has been appointed demonstrator of hygiene and public health at University College, London.

THE Misses Riddell, of Beckmount, Belfast, have presented 5000*l.* to Queen's College, Belfast, for the establishment of a Riddell demonstratorship of pathology.

WE learn from *Science* that Lord Strathcona has given 4000*l.* to Manitoba University to extend its scientific work, and that Mr. John A. Creighton has given a further sum of about 50,000*l.* to Creighton University, a Catholic institution at Omaha, Nebraska.

THE death is announced, at the early age of thirty-nine, of Dr. E. A. de Schweinitz, director of the Biochemic Laboratory of the U.S. Department of Agriculture, dean of the Medical Department of Columbia University, and well known for his contributions to bacteriology.

A BILL on higher education has, says a *Times* correspondent, been introduced in the Second Chamber of Holland by Dr. Kuyper. The Bill has for its object the granting to private universities, under certain guarantees, of the same rights and privileges as are accorded to the State universities, including the faculty of conferring degrees upon students wishing to enter the public service. The Premier, it appears, attaches great importance to this piece of legislation, and the *Standaard,* the recognised organ of his party, has already threatened the resignation of the Cabinet should the Government fail to obtain a majority in the final division.

THE authorities of the Yorkshire College, Leeds, have received a letter from the Committe of the Privy Council to announce that the committee "see no reason to modify their opinion that the proper title to be assumed by a university with its seat in Leeds is the University of Leeds." Their lordships have recommended to His Majesty the restriction of the title, both on the score of precedent and convenience. The Charter will now soon be laid on the table of the House of Commons, and it is not expected there will be any further delay in the matter. The movement for a new university at Leeds, towards establishing which some 40,000*l.* has been promised, has been throughout regarded as a county movement. The West Riding County Council has promised something like 6000*l.* in the aggregate annually towards the Leeds and Sheffield Universities.

IN a lecture at University College, London, on the universities and colleges of the United States, Dr. T. Gregory Foster, one of the members of the Mosely Education Commission, referred to social and industrial conditions as affecting university life. He pointed out that at every university and college he visited—whether at ancient Yale and Harvard or at the infant University of Chicago, or at the State universities—at all alike one found rich and poor. Each university issued a leaflet to show how the poor man could pay, or help to pay, his way during the university course without loss of caste. Business men in the United States are glad to employ men who have more than a common school or high school education. There is a certain prospect of employment for all who have passed through a university course.

THE Committee of the Privy Council has considered the case presented on behalf of the petition of the University College of Sheffield praying for the grant of a Charter incorporating a university in Sheffield and the resolutions in its support adopted by various bodies. The committee understands that the promoters are engaged in raising a sum of 170,000*l.* for the purposes of the university, by the appropriation of part of which new buildings of a suitable character will be in readiness by the spring of 1905, and that in addition to a considerable yearly sum which the city council has promised to provide, material assistance may be looked for from the county council of the West Riding of Yorkshire, and probably from Derbyshire and the large urban communities in the neighbourhood of Sheffield. In these circumstances their Lordships are willing to entertain favourably the application, and, subject to a substantial realisation of the hopes mentioned, will be prepared to recommend to His Majesty the grant of a Charter in general conformity with the draft accompanying the petition.

MR. LYTTELTON, Secretary of State for the Colonies, was the guest of the Liverpool University Association on March 5 on the occasion of the first dinner under the auspices of the association. The right hon. gentleman, in replying to the toast of his health, said "the object of all education is to endow the mind of the student with strength, accuracy, and elevation. It is well also that such a mind should have power to express its thought with clearness and, if possible, with attractiveness. That is the reason that classical languages have been for so long the main study of the country. But things have altered now. Around and competing with us are all the great communities of Europe, which are becoming more and more organised, intelligent, and specialised in knowledge. Hence has arisen a necessity for the equipment of our young men by study for the immediate struggles of life. We have been frequently met by the criticism that to teach the young to snatch greedily at mental improvement with the sole purpose of disposing at a profit of what has been learned is but a narrow education; but it is well competent for us to learn worthily the great principles which underlie practical professions, and not to despise those principles because they have practical achievement as their result."

MR. GRAY, M.P., has asked in Parliament for an explanation why the Board of Education have recently reduced the value of the national and research scholarships from 30*s.* to 25*s.* per week, and whether, having regard to the desirability of keeping these scholarships open to students unable to supplement them by private means, he would advise the Board to reconsider their decision. In the course of his reply to the question, Sir W. Anson remarked:—"The Board have never intended that these scholarships should be of an eleemosynary character. They believe that the amount of the scholarships is sufficient to attract good candidates, and that in the majority of cases they provide an adequate supplement to the other resources of the students, and they consider that in any cases where more is needed the assistance should be provided under the supervision of local authorities rather than from funds administered by the Board. The students who gain these scholarships have, as a rule, been for a period of years under the direct observation of local school authorities, who thus

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necessarily possess, or can readily obtain, a more intimate knowledge of the circumstances of each student than can the Board. The scholarships now provided by local authorities offer in many places the further assistance required. In these circumstances I do not consider it desirable that the decision of the Board be reconsidered." It would be interesting to know how many national scholars receive any assistance from local authorities or have any resources beyond the 25*s.* per week now allowed them by the Board. Certainly it is desirable for local bodies to supplement the value of national scholarships, but while the Board of Education and local authorities are evading responsibility for support, the students who have not the additional resources referred to by Sir W. Anson have to cultivate high thinking on very poor living. The only satisfactory solution of the difficulty is the provision of a hostel or residential college so that students may learn something of the corporate life which should be an essential part of a university education.

SOCIETIES AND ACADEMIES.

London.

Chemical Society, February 17.—Dr. W. A. Tilden, F.R.S., president, in the chair.—The following papers were read :—Observations on some intramolecular and originally reversible changes extending over prolonged periods of time : R. J. **Friswell.** It was suggested (1) that the labile condition is not confined to hydrogen, and (2) that the constitution of a compound may vary according to the particular "stress" to which it is subjected. Experiments illustrating these points were described, such as the slow decomposition of aniline hydrochloride by aminoazobenzene even in presence of excess of aniline.—Note on magnesium oxybromide : G. W. F. **Holroyd.** This substance was obtained by saturating an ethereal solution of magnesium phenyl bromide with acetylene, when it separated in the form of colourless crystals consisting of one molecule of the oxybromide with two molecules of "ether of crystallisation."—The arrangement in space of the groups combined with tervalent nitrogen atoms : F. S. **Kipping** and A. H. **Salway.** The authors have attempted to detect asymmetry in a number of tervalent nitrogen compounds by treating these with *d-l*-benzylmethylacetylchloride. The products of these reactions remained homogeneous after fractional crystallisation, whence they conclude that the three radicles and the tervalent nitrogen atom itself in such compounds are situated in one plane, and that each pair of the radicles is symmetrically situated with regard to the third.—The esterification of *r*-mandelic acid by menthol and borneol : A. **McKenzie.** The esters obtained were described.—Certain organic phosphorus compounds : A. E. **Dixon.** Phosphorus trithiocyanate, a colourless oil readily hydrolysed by water into phosphorous and thiocyanic acids, and phosphoryl trithiocyanate, a pale yellow, highly refractive oil, were obtained respectively by the action of phosphorus trichloride and phosphorus oxychloride upon ammonium thiocyanate. These substances behave both as thiocyanates and thiocarbimides, and this tautomerism is being further investigated.—Note on the relation between the chemical composition of some organic substances and the densities of their solutions : C. E. **Fawsitt.** Determinations of the densities of solutions of homologous carbamides, amines and acids have shown that this property is of an additive character, though slightly modified by constitutional influences.—The so-called hydrocellulose : A. L. **Stern.** It was shown that the pulverulent substance formed by the action of dilute acids upon cellulose contains soluble hydrolytic products, and that the bulk of the material has the same composition as cellulose.—(1) Isomeric change of diacylanilides into acylaminoketones ; (2) intramolecular rearrangement in derivatives of the aromatic aminoketones : F. D. **Chattaway.**

Royal Microscopical Society, February 17.—Dr. Hy. Woodward, F.R.S., vice-president, in the chair.—A paper by Mr. **Stringer** on an attachment for reading the lines in a direct vision spectroscope was read. The attachment consists of a light rigid arc of phosphor-bronze of about 40 degrees and 6¼ inches radius, cast in one piece with two radial arms that project from a broad ring, by which it is clamped to the body of the instrument. It lies just below the telescope, which is traversed across the spectrum by a screw that works through one of the radial arms and presses against a lug projecting downwards from the telescope to which it is clipped. A spring attached to the other radial arm acts on the opposite side of the lug and forces the telescope back when the motion of the screw is reversed. The arc carries a millimetre scale, divided in white on a black ground, and a vernier reading to tenths is carried by the telescope. Immediately below the eye-piece is a magnifying lens through which the scale and vernier can be read without any change in the observer's position.—A paper by Mr. **Nelson** on the vertical illuminator was then read. The author said that after lying in abeyance for twenty-five years, the vertical illuminator has lately come into notice for the examination of opaque objects and especially for the microscopic examination of metals. He said a vertical illuminator must not be an oblique illuminator only, but must be capable of illuminating the full aperture of the back lens with a parallel beam of light. It must not be a permanent attachment to an objective so as to impair its performance for ordinary work. The reflector must be placed near the back lens, and there must be some method for regulating the illumination. To obtain the best advantage with vertical illumination it is necessary to use oil immersion objectives.—Another paper by Mr. **Nelson** on the influence of the antipoint on the microscopic image shown graphically was read. The author referred to a paper in the *Journal* for 1903 on a micrometric correction for minute objects, wherein he stated by way of illustration that if one of the minute spinous hairs on a blow-fly's tongue was examined on a bright ground and on a dark ground, a considerable difference in the sizes of the two images was discernible, and that the difference was caused by antipoints. A table was also given showing the amount to be added to the micrometric measurements of the image seen on the bright ground to bring it up to its true value. Mr. Gordon, who had originated the theory of the antipoint, had made accurate drawings of the two images of the hair, and the ratio of the breadths of the hair in these drawings was as 45 to 65. Applying the corrections given in the table to the measurement of the apparent size of the hair on a bright ground, the actual size works out to 12 per cent. more.—Mr. Keith **Lucas** followed with a paper on a microscope with geometric slides. He defined a geometric slide as one in which each motion which is not desired is separately eliminated by a single stop so arranged as not to interfere with any other possible motion. This principle he had applied in the design of a microscope to the slides of the fine and coarse adjustments and to the substage.

Royal Meteorological Society, February 17.—Captain D. Wilson-Barker, president, in the chair.—Mr. E. **Mawley** presented his report on the phenological observations for 1903. He showed that owing to the mildness of the winter and early spring wild plants flowered in advance of their average dates until about May, after which time only backward dates were recorded. In no previous year since the present series of reports was first instituted, in 1891, have such spring migrants as the swallow, cuckoo, and nightingale been so late in reaching our shores. The yield of wheat, barley, potatoes, turnips, and swedes was somewhat under average, but all the other farm crops yielded well, especially those of hay and beans, which were unusually abundant. On account of the wet and protracted harvest most of the grain of the cereals was more or less discoloured, while potatoes were almost everywhere much diseased. Throughout the country this was one of the most disastrous years for fruit ever known. In fact, the only crop which gave anything like an average yield was that of strawberries.—Mr. W. H. **Dines** gave an account of the observations which he had made by means of kites at Crinan, off the west coast of Scotland, during last summer. These observations were carried out by Mr. Dines under the auspices of a joint committee of the Royal Meteorological Society and of the British Association, the Government Grant Committee of the Royal Society providing funds for the hire of a vessel for the purpose. The author, after describing various improvements which he had effected in the kites, stated that the weather last summer was most un-

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